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Bone and Horn Harpoon Heads of the Ontario Indians.

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Introductory.

The fish-spear, or harpoon, was extensively used by many of the aboriginal inhabitants of North America. The first European colonists were astonished to see the abundance of fish in the rivers and lakes, and they found that the natives captured them in various ways—with hook and line, nets, weirs and harpoons. In the accounts given by these early colonists and travellers, we find numerous references to the use of the latter implement. Captain John Smith said: "They of Accawmack use staves like unto javelins, headed with bone; with these they dart fish swimming in the water" (p. 36). In his "Account of Two Voyages to New England," John Josselyn gave a very similar description: "The *Bass* and *Blew-fish* they take in harbours and at the mouth of barr'd Rivers being in their *Canows*, striking them with a fisgig, a kind of dart or staff, to the lower end whereof they fasten a sharp jagged bone (since they make them of Iron) with a string fastened to it, as soon as the fish is struck they pull away the staff, leaving the bony head in the fishes body, and fasten the other end of the string to the *Canow*. Thus they will hale after them to shore half a dozen or half a score great fishes" (p. 140). According to Roger Williams, "The Natives venture one or two in a Canow, and with an harping Iron, or such like Instrument, sticke this fish, and so hale it into their Canow" (p. 102). Loskiel, in speaking of the Delawares and Iroquois, said: "The Indians always carry hooks and small harpoons with them whenever they are on a hunting party" (Part I., p. 94). The Montagnais, we are informed by Sagard (p. 685), captured fish in two ways—"with a wicker basket or with a harpoon during night by the light of fire." The sturgeon harpoon of the Iroquois, as described by Charlevoix (p. 87) was secured to the canoe by a long cord. Le Jeune* describes the harpoon for spearing eels as "an instrument consisting of a long stick, of the thickness of three fingers, to the end of which they fasten an iron spike, which

*Relation de ce qui, s'est passé en la Norvella France svr le grand Fleuve de S. Lavrens en l'année, 1634; Relation des Jésuites, etc. Vol. I, p. 44.



they arm on each side with a curved prong, both coming nearly together at the end of the iron point.* In striking an eel with this

*An Eskimo specimen in our Museum is very much like the harpoon here described. It consists of a wooden shaft, about two feet long, pointed with an iron spike, on each side of which there are two thin flexible pieces of bone, armed with iron prongs. These prongs curve downwards, their points almost meeting and coming close to the point of the iron spike. Dr. Boas in his "Central Eskimo" (6th Ann. Rep. Bureau of Ethnology) figures two very similar specimens (fig. 453 a, b).

harpoon, they drive the iron into it, and the two prongs, yielding to the force of the thrust, let in the eel, after which they contract again by themselves (having opened merely by the shock of the stroke) and prevent the speared eel from escaping. Perceiving an eel [the Indian] darts his harpoon without losing hold of it, pierces the eel as stated, and then throws it into his canoe. Some will catch three hundred, and many more, in a single night, but very few at other times.”*

It was among the Eskimo, however, that the harpoon reached its highest development, calling into existence numerous accessories which were unknown to the Indians; but for detailed information about Eskimo harpoons, and also those used by the West Coast and Southern Indians, the reader must be referred to the books mentioned in the list of works consulted, the limits of this article not permitting the writer to quote any more of the numerous extant descriptions.

One is struck with the remarkable similarity between harpoons from Europe and America. As Sir J. W. Dawson said in his “Fossil Men,” “The visitor to the British Museum may see bone harpoons from the caves of the Reindeer folk of France, so like those in the same collection from Greenland and Terra del Fuego, that all might have come from the same workshop.” Mr. W. Boyd Dawkins, in his “Early Man in Britain” (p. 233) suggests that the Eskimo might be the descendants of the ancient cave men of France, and he bases his conclusions mainly upon the similarity between the carved weapons and implements and other art products of the two peoples. The resemblance between American and European harpoon heads would, perhaps, also tend to strengthen Prof. Dawkins’ hypothesis. He says “there are no savage tribes known which use the same set of implements without being connected by blood;” but then, if this similarity, in so far as harpoons are concerned, is suggestive of racial affinity, how would we account for the resemblance of the Fuegian to Eskimoan and European forms, for they are all similar in form and function? His conclusions regarding the Eskimo and cave men, however, seem plausible.

It will be observed that many of the harpoon heads figured in this article resemble Eskimo specimens, and this similarity is strongly suggestive of Eskimo influence. In his “Notes on Primitive Man in Ontario,” Mr. Boyle says: “On account of the extensive use of bone by the Eskimo, there is a strong temptation to refer many of our specimens of this kind to Innuït origin, especially as the resemblance of ours to theirs is often very marked. But, in this respect, there does not appear to be any more reason for so doing than there is for attributing the same origin to flints, vessels of soap-stone and some other things. Still, when we take into account the Huron-Iroquois tradition as to the former abiding place of the nation on the north shore of the gulf of St. Lawrence, we may at once concede the probability of strong Eskimo influences affecting the work of our Indians.† That bands of these people habitually found their way south and west of the Ottawa is extremely improbable, and it has not been shown that they ever resided here before the advent of our Indians. Anything, therefore, indicative of Eskimo influence may be accounted for as already mentioned, by the old-time contiguity of the peoples ‘down

*Father Dablon said, “Some take as many as a thousand in a single night.”

†According to William E. Connelley the Wyandots “claim to have known the Eskimo.” Ont. Archaeological Report for 1899; p. 93.

by the sea,' if, indeed, not the workmanship of the Montagnais-Nascopies, who, it seems clear, occupied a large portion of eastern Ontario at some distance back from the St. Lawrence."* But may not the Eskimo at one time have occupied Ontario, and even New York? It has been "claimed that the Northmen encountered the Eskimo in New England nine hundred years ago."† "From evidence based upon investigations by Doctor Rink, and the archæological indications noted by Mr. Dall and others," said the late Dr. W. J. Hoffman, "the Eskimo are believed to have become a littoral people in America by expulsion from some interior regions of North America, such expulsion having been brought about through the northward expansion of the Athabaskan tribes toward the northwest, and the Algonkian tribes toward the northeast. Even within historic times the Eskimo occupied a more extensive coast line southward on the Atlantic than at present, and it is impossible to conjecture what may not have been the southern limits, in prehistoric times."‡

Among other evidences of Eskimo influence and contact, we have the semi-lunar knives of slate (of which there are several in the Provincial Museum) which are very much like the Eskimo "woman's knives." Our Indians also seem to have had a knowledge of the Eskimo toggle-joint. Several articles made of walrus horn have been found on New York Indian village sites, and there is a walrus horn§ from Balsam lake in our own Museum. These were no doubt obtained by bartering with the Eskimo or Nascopies.

"As for the fishes found in the rivers and lakes in the country of our Hurons, and particularly in the fresh-water sea," Sagard tells us, "the principal are the Assihendo . . . and trout, called Ahouyoche by them, which are mostly of extraordinary size, insomuch that I have not seen there any that were not bigger than the largest we have on this side. . . . The pike, called Soruissan, which they catch here also with the sturgeon, called Hixrahon, astonish people, for some are of marvellous size." (Vol. III., p. 693.) Pike of large size are frequently caught in many of the inland waters of Ontario, and sturgeon have been captured in the Grand River, as far north as Brantford, in recent years. Judging from the number of large veretebræ found on many Indian village sites throughout the Province, the salmon trout was also abundant. Ample use for harpoons, therefore, was to be found in the localities where harpoon heads have been discovered.

Most of our harpoon heads were no doubt fastened to the shaft in the same way as are those of the Eskimo. Figure 1 shows the barbed head of an Eskimo harpoon,¶ and a portion of the foreshaft and the connecting line. The wooden shaft and the foreshaft, a cylindrical piece of fossil ivory, are fastened together by a tenon joint, re-inforced by a whipping of thong. A plug consisting of two pieces of willow wood (B), with a small hollow in each, into which the tang of the bone head fits loosely, is inserted into the socket hole of the

*P. 72.

†"Southern Visits of the Eskimo," by Rev. W. M. Beauchamp; Proc. of Amer. Ass'n, 1894; Vol. 43, pp. 344-5.

‡"Graphic Art of the Eskimo." Report of the U. S. National Museum, 1895, p. 765.

§The walrus is known to have frequented the coast of Prince Edward Island within historic times, so it is also possible that the Ontario and New York Indians obtained their material from the Micmacs.

¶From Herschel island, at the mouth of the McKenzie river, where it was collected by Mr. Rev. I. O. Stringer

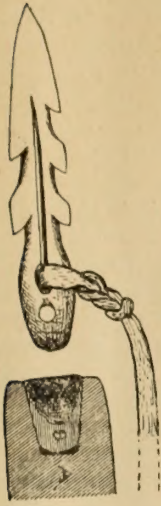


Fig. (1).



Fig. (2).

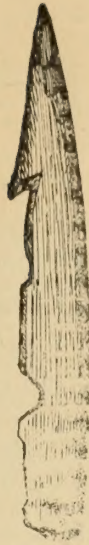


Fig. (3).

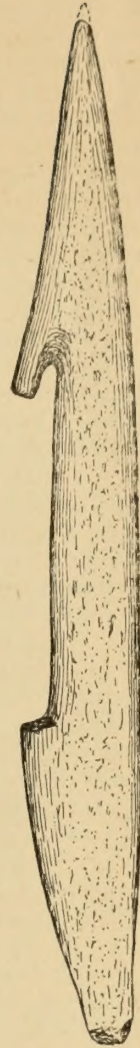


Fig. (4).

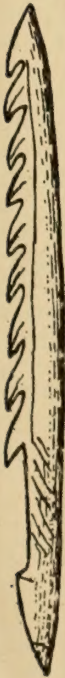
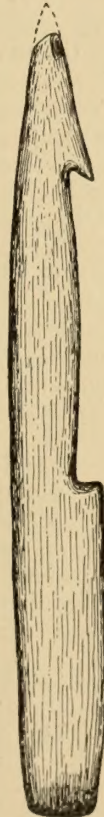
Fig. (5).
Half size.Fig. (6).
Full size.

Fig. (7).

NOTE.—Figs. 5 and 6 are after Rau.

foreshaft (A). But if they were parts of retrieving harpoons, our specimens would have been fitted directly to the wooden shaft, in the same way as the Fuegian examples and the "fisgig" described by Josselyn, for nothing corresponding to the foreshaft has ever been found in the Province. The heads of all Eskimo retrieving harpoons are detachable, but here in Ontario, such an arrangement would, perhaps, not have been required, as it was unnecessary to let the harpoon leave the hand: the fish could have been captured in the way described by Williams, by sticking them, and then hauling them into the canoe or to the shore. The toggle-head harpoon, however, was intended to be thrown, and if our Indians used the more ingenious toggle-head, they would also have employed the simpler harpoon with detachable head; for the toggle-head type, it seems, is an outgrowth of the latter.

The eel spear described by LeJeune was unlike anything figured in this article, unless some of our unilateral specimens were fastened together to a shaft, as are two Eskimo examples shown in Nilsson's "Primitive Inhabitants of Scandinavia" (Plate IV., figures 75 and 76). While excavating on the Sealey farm, Brant county, a farmer found two unilateral harpoons lying so close together—the barbs facing—as to suggest the idea that they had both, perhaps, been fastened to a single shaft.

There are three types of harpoon heads. We will describe the specimens belonging to each type separately.

I. UNILATERALLY BARBED.

The simplest form of harpoon head is the unilateral with barbs along one side only. Specimens of this type have been found over a wide area in North America—in the following States and Provinces: California, British Columbia, Alaska, Alberta, Manitoba, Minnesota, Wisconsin, Michigan, Ohio, New York, Massachusetts, Maine and Nova Scotia. Heads of this type were also used by the natives of Tierra del Fuego, some of them being over fifteen inches long. Many of the Eskimo specimens are unilateral. A large number are found in New York, but very few in Ohio and Michigan. The Ohio specimens are mainly from near Columbus and Madisonville. Those from the former place were found in mounds. Some of the Wisconsin heads are made of copper. The Nova Scotian harpoons differ from ours in having strongly shouldered barbs. A five-barbed specimen from Lunenburg county, in the Provincial Museum, Halifax, of which Mr. H. Piers, the Director, kindly supplied me with a sketch, has all the barbs shouldered.* Figure 27*d*, in Dawson's "Fossil Men," shows a Micmac example from Nova Scotia, which has the notches, forming the barbs, cut out square, and in addition the edge is serrated for about three-quarters of the distance between each barb.

It is a matter for conjecture why these harpoon points should be barbed on the one side only. One would think that this might deflect the course of the harpoon during its passage through the air or water. M. Broca, the well-known French anthropologist, was struck with this feature, and in describing the harpoon of the cave men, said, "The use of its barbs was to catch and retain 'the fish after it was struck;

* A harpoon head (fig. 239 in Rau's "Prehistoric Fishing") found in a grave at Fort Wayne, near Detroit, Michigan, very close to our western borders, resembles this specimen, the barbs all being shouldered; and this is the case with another Michigan specimen shown by Rau in his fig. 231.

but why," he asks, "were they all upon one side? To diminish the width of the dart so that it might penetrate more readily? I cannot say." And in a foot-note he adds: "One of my colleagues of the French Association, M. Lecoq de Boisbaudran, in a communication to the anthropological section, makes some very interesting remarks upon the mode of action of the unilateral barbs. While passing through the air, these barbs do not cause the harpoon to deviate perceptibly, but as soon as it enters the water, the unequal resistance it encounters must necessarily change its direction. It would seem, then, that the fisherman who aimed straight for the fish would miss it.* Now, it is well known that a straight stick appears to be broken [or bent] when plunged obliquely in water; in like manner, in consequence of the refraction of the luminous rays, the image of the fish is displaced, and if direct aim were taken at the image, it would also be missed. Here are, then, two causes of error. Now, it is evident that if they can be brought to act in opposite directions, they will counteract each other, and M. Lecoq shows, that when the barbed side is turned downward, the harpoon will reach its destination. This arrangement of the harpoon was then intended to rectify its course, which indicates great sagacity of observation in our troglodytes."†

The unilaterally barbed heads might be conveniently divided into two sub-types—those with a single barb and those with multiple barbs.

Single Barbed.

Figure 2 (14,806)‡ shows the most crude example in the Museum. It seems to have been made from a splinter of elk horn. With the exception of pointing it and forming the barb, very little work has been expended on it, the basal portion being left in its original condition. The tip and the barb are both broken as the result of decay. This specimen is 4 inches long. It was found by Mr. Boyle in the large Miller mound, near the mouth of the Otonabee river, Peterboro' county.

The specimen shown in figure 3 (20,032) is made from a fragment of elk horn, and is only partly completed, the reverse side being still in the rough state. Considerable cutting has been done to reduce the thickest portion, but much remains to be cut away. The base has been whittled until it is slightly rounded. There is a deep notch on one side, and about midway between the barb and the base there is another, but not quite so deep. Perhaps it was the intention of the workman to reduce the thickness between the barb and the notch so as to conform with others of the same type. Length, 5 inches. It comes from the Sealey farm, Brant county.

A fine specimen of horn, from the Sealey farm, is represented in figure 4 (25,513). It has one large prominent barb which is broken or cut off square. The tip is fractured, but otherwise it is a very well

* A friend, who has had some experience in spearing fish, informs the writer that if one aims directly at the fish he will miss it, but by aiming at a point some distance from where it appears to be (the distance, of course, varying according to the depth), the spear will not fail to pierce the fish. The Southern Indians also seem to have been acquainted with this fact, for Adair tells us that "If they shoot at fish not deep in the water, either with an arrow or bullet, they aim at the lower part of the belly, if they are near; and lower, in like manner, according to the distance, which seldom fails of killing." (Pp. 402-403.)

†The Troglodytes, p. 329.

‡The numbers enclosed in parenthesis are those in the Museum catalogue.

preserved specimen. It is 8 3-16 inches long and a little over one-half inch thick. One particular feature of this, as well as figures 7, 8, and 9, is the shouldered projection on the basal portion, which was no doubt intended to retain the cord by which it was fastened to the shaft. This is no uncommon feature on European specimens. We give figures of two well-known examples for comparison, figure 5 showing one from the rock-shelter of Bruniquel, France, which, although otherwise dissimilar, resembles figure 4 very much. It will be observed that the other, figure 6, from Kent's Cavern, Devonshire, England, is provided with an almost similar projection, but it is not so strongly shouldered. Figure 224 in Rau's "Prehistoric Fishing" shows one from Unalashka island, which also resembles figure 4 very closely, and some from British Columbia shell-heaps possess this feature.

The example shown in figure 7 (628) is also from Brant county. This specimen is made of elk horn and is $7\frac{3}{8}$ inches long. It is perfect with the exception of the tip. The base is slightly beveled or wedge-shaped. It is flat on one side and rounded on the other. This head was no doubt fastened to the shaft in the same way as figure 4, the function of the more angular shoulder being the same as the projection.

Figure 8 (7,088) shows an unfinished harpoon head from York county. It is made of elk horn, and retains the cellular structure on the reverse side. The barb and point are quite sharp. The base is worked thin until it is wedge-shaped—no doubt so that it could be easily inserted in the socket hole of the shaft. This specimen is 5 inches long.

A large number of unfinished harpoon heads come from the Sealey farm, Brant county. The one represented in figure 9 (20,034), from this place, is of the same type as the preceding specimens. It has been very roughly cut out and reduced to shape with a hatchet or other sharp metal tool. Many of the cuts could have been made with an iron axe only, as they are long and deep, and clear cut. In forming the base, a deep cut was made on each side, and the undesirable portion of the material broken off. After the horn had been hacked into some resemblance to a harpoon, it appears to have been "shaved" or whittled with a knife until it assumed the desired form. Figure 9 shows all these successive stages, and is very interesting and instructive on this account. The barbed portion of these unfinished specimens is always completed, but in this example the cuts made with the knife have not been smoothed. The shaft near the base is somewhat gibbous, but this undoubtedly would have been partly reduced by the smoothing or polishing process. It is hard to say whether it was the intention of the workman to provide this one with a hole or not. Considering the stubbornness of the material, it is really astonishing how much endurance was displayed in the manufacture of these implements. The length of this specimen is $8\frac{3}{4}$ inches. It is cellular on the reverse side.

Figure 10 (25,521) is another unfinished specimen of this type made of horn. It is 5 7-8 inches long and comes from the Sealey farm. The barb is broken.

In the specimen shown in figure 11 (20,033) we have a slight departure from the preceding forms, this one being shouldered on both sides, the shoulder extending across the cancellated side shown

in the figure. The other side is smooth. It is $8\frac{3}{4}$ inches long, and a little more than $\frac{3}{4}$ thick, thinning down to less than $\frac{1}{4}$ inch at the base. Like all the large harpoon heads, it is made of elk horn. It was found on the Sealey farm.



Fig. (8).



Fig. (10).



Fig. (9).



Fig. (11).



Fig. (12).

Figure 12 (25,514) shows a large, heavy, unfinished specimen of elk horn, $9\frac{1}{4}$ inches long. It is from the Sealey farm. The illustration shows the rude state in which the specimen was left, the side shown still retaining the rippled or corrugated appearance character-

istic of deer and elk horns. The other side is cellular. The barb is well made, sharp in the axil, and has a moderately sharp point. The



Fig. (13).



Fig. (14).



Fig. (15).



Fig. (16).

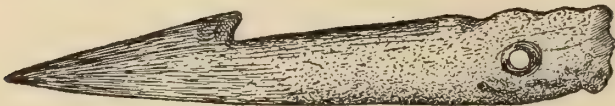


Fig. (17).



Fig. (18).

base is abruptly expanded. Perhaps it was the intention of the maker to have a hole through this expanded portion, as in many

others of this type. In his "Horn and Bone Implements of the New York Indians," Dr. Beauchamp figures two specimens (242 and 245) resembling this one, although the bases of his are not so expanded.

Another unfinished harpoon head is given in figure 13 (20,035). It is 9 inches long. The head or barbed portion is the only part that is finished. This specimen was found on the Sealey farm.

In figure 14 (25,601) is shown another specimen from the Sealey farm, and this is of the same, single barbed type. It is 7 3-8 inches long. As may be seen in the illustration, it is unfinished. The reverse side is flat. The basal portion gradually decreases in thickness toward the end. The point is obtuse, but the barb is quite sharp.

An elk horn specimen, 7 1-8 inches long, from York county, is shown in figure 15 (8,101). With the exception of the basal portion, which appears to be unfinished, this specimen is well made. The base has had some cutting down to reduce its thickness. The side figured shows the natural roundness of the horn, the lower one is flat. This specimen differs from the ones previously described in having a hole in the expanding lower part. It has been roughly gouged out on both sides, and is more diamond-shaped than round. The axil of the barb is acute and the point is quite sharp. The tip is broken.

The well made specimen of elk horn, of which an illustration is given in figure 16 (8,132) comes from Beverly township, Wentworth county. The basal end is considerably flattened and thinner than the shafted portion, and is strongly shouldered. The hole was made by two conical perforations meeting in the middle. The tip is broken. The axil of the barb is not very acutely angled, and the point of the barb is obtuse. Length nearly 8 inches.

A very simple form is shown in figure 17 (20,036). It comes from the Sealey farm. The hole has been drilled from both sides, the perforations meeting in the middle. The base has been slightly beveled on the side shown in the illustration, but otherwise this end of the implement is still in the rough state. It retains the natural corrugated surface of the horn, and the under side is cellular or cancellated. The barb is moderately sharp and the tip acute. On one of the edges, near the hole, are three shallow notches; and these undoubtedly facilitated the fastening of the line, or of the head to the shaft. The length of this specimen is 6 3/4 inches.

The specimen represented in figure 18 (629) is from Brant county, and is interesting on account of the position of the hole, which is at some distance from the base. It was drilled entirely through, and not from both sides, as is usually the case. In addition to the drilling of the hole, pieces of the horn have been gouged out on either side of the perforation. The base was cut with an axe and no further work has been expended on it, except, perhaps, a little whittling to reduce the thickness. The cut, as may be seen in the figure, is sharply beveled. The lower side of this specimen is flat. The barb is well made. Length 7 inches. Figure 232, in Rau's "Prehistoric Fishing" shows a very similar specimen from Madisonville, Ohio, but the hole is much nearer the base.

What may originally have been a head with two barbs is shown in figure 19 (7,895). It is from Lansing, in York county. This specimen is of deer's horn and is very crude. The base is much decayed and may have been much longer. The barb is broken and the tip is very blunt. There is an irregularly shaped hole near the base. The reverse side is slightly hollow. It is 4 5-16 inches long.



Fig. (19).



Fig. (20).



Fig. (21).



Fig. (22).



(Fig. 23).



Fig. (24).



Fig. (25).



Fig. (26).

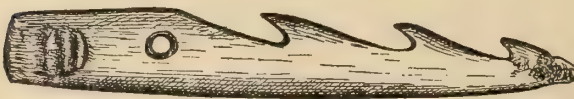


Fig. (28).



Fig. (27).

Figure 20 (20,145) shows a specimen from the Baldwin farm near Brantford. It may have had more than one barb, as a considerable portion is broken away. It is of horn and retains the natural hollow on one side. The hole is very near the edge and also close to the barb. The base is somewhat decayed, and it is difficult to say whether it originally was much longer or not. It is $6\frac{1}{2}$ inches long.

MULTIPLE BARBED.

The small specimen shown in figure 21 (14,805) is from the large Miller Mound, Otonabee river, Peterboro' county. It is of horn, and is a little over $3\frac{3}{4}$ inches long and about $\frac{1}{4}$ thick.

Figure 22 (16,743) shows an unusually squat form, made of elk horn, from Waverly, Simcoe county. It is $4\frac{1}{2}$ inches long. The tip of this specimen is much decayed and the last barb is also quite blunt as the result of decay. There is a round hole through the basal portion.

The very nicely finished specimen of deer horn shown in figure 23 (17,983) was collected by Lieutenant Geo. E. Laidlaw in Bexley township, Victoria county. It retains the spongy or cancellated structure on one side, which is now somewhat flattened. The base has been brought to a rounded point so as to fit into the socket hole in the shaft. The hole is very roughly drilled. The barbs and their axils are quite acute, but the tip is obtuse. The length of this specimen is 5 5-16 inches.

The fragmentary specimen of bone represented in figure 24 (14,794) was found in the Miller mound, Peterboro' county, by Mr. Boyle. It retains the natural hollow of the bone on one side near the fractured end. The barb is unlike that of any other specimen in the museum. It resembles those on a specimen from Maine, shown by figure 237 in Dr. Rau's "Prehistoric Fishing." The axil of this barb is not sharp, but rounded, and the point does not project far beyond the edge. This fragment is a little over $2\frac{3}{4}$ inches long.

Figure 25 (18,043) shows a specimen from lot 1, North Portage Road, Bexley township, Victoria county, which was collected by Lieutenant Laidlaw. It seems to have been made from a portion of a deer's tibia, part of the articular end still remaining and forming the base of the specimen. Some rubbing has been done to make this end much thinner. Advantage has been taken of the natural depression on the side of the bone to form an irregular, oblong hole. The barbs are all somewhat rounded, and the tip is obtuse. A portion of the narrow cavity remains on the reverse side. The length of this specimen is $3\frac{3}{4}$ inches.

The smallest harpoon head (it is only $2\frac{3}{4}$ inches long) in the Provincial Museum is represented by figure 26 (22,017). It is perfect, and a very well made specimen indeed. All the barbs except one are acute, and the axils are rounded. The tip is quite sharp. The eye-hole is a little more than $\frac{1}{2}$ in. in diameter. This specimen is made of deer horn and comes from lot 13, concession 2, East York township, York county.

In many respects the specimen, from Victoria county, shown in figure 27 (8,091) is similar to the one last described, although it is very much larger. This is a fine specimen, and, with the exception of two breaks, it is perfect. It is 6 5-8 inches long. The base is thinned down to an almost chisel-like edge. The hole is lenticular and

slightly countersunk. Axils of the barbs are squarely cut. The side showing the cellular or spongy structure is given in the figure. Both



Fig. (29).



Fig. (30).



Fig. (31).



Fig. (33).



Fig. (35).



Fig. (32).



Fig. (36).



(Fig. (34)).

this and figure 23 resemble Alaskan forms in having an oblong hole very near the edge. There is a fragment of a harpoon head (25,015) in the museum which has a round hole not quite $\frac{1}{8}$ of an inch from the edge.

Figure 28 (8,104) shows one from Eglinton, York county, which is a very neatly made specimen 6 3-8 inches long. The barbs are well made and sharp, and the axils are rounded. The thickness of the base has been slightly reduced. The tip is somewhat injured and broken.

Both sides of a very well made specimen from lot 12, concession 7, Nottawasaga township, Simcoe county, collected by Mr. F. Storry, are shown in figure 29 (26,244). It is made of bone, one side still retaining a portion of the natural hollow or marrow cavity. This makes the barbed portion less than $\frac{1}{2}$ of an inch thick. It is nearly 3-8 of an inch thick at the back. Its length is 6 1-8 inches. The hole is very irregular, and more square than round. Some cutting has been done on the base to reduce its thickness. The barbs are slightly shouldered and are all quite sharp. The tip is not pointed, but is broad and chisel-shaped.

In figure 30 (25,053) is represented a very massive specimen made of elk horn, $8\frac{1}{2}$ inches long and nearly 5-8 of an inch thick. The side figured shows the natural rounded surface of the horn; the lower one is flat. All the barbs are cut out square as if with a saw. Most of the barbs and the tip are quite sharp. Unfortunately, it is not known where this fine specimen came from.

For the sake of comparison with Ontario forms, we present in figure 31 (21,254) an illustration of a fragmentary harpoon, from the northeast shore of Lesser Slave lake, Alberta, Canada. This specimen must originally have been very large. Its present length is $4\frac{1}{2}$ inches. It is made of deer or caribou horn and is very much weathered.

There is only one metal harpoon head in the Museum, and this is represented in figure 32 (9,829). It appears to have been made from an old iron knife blade. It is very much rusted. There is a small hole through the basal end. The third barb from the end is slightly shouldered. Length $5\frac{1}{2}$ inches. It comes from Nottawasaga township, Simcoe county.

II. BILATERALLY BARBED.

This type of harpoon head has a very wide distribution on this hemisphere, being found in use among the natives of Tierra del Fuego, and in California, British Columbia, Alaska, and among most of the Eskimo tribes inhabiting the polar regions between the latter country and the north Atlantic seaboard. Specimens of this type are also met with in Europe. The barbs on some of the British Columbian and Californian examples are large like those on harpoon heads used by the cave men of France. New York State furnishes many fine examples. Thirty of the forty-six specimens figured by Beauchamp in his Bulletin on "Horn and Bone Implements of the New York Indians" are bilateral. They resemble Ontario forms very closely. A fragmentary Hochelagan specimen represented by figure 26 in Dawson's "Fossil Men" is very much like some in the Museum here, except that the base is broader. They have also been found in the States of Vermont, Pennsylvania, Massachusetts, and Maine.

The writer was inclined to think that the bilateral type was, perhaps, the earliest form of harpoon head. Dr. Beauchamp, however, says (p. 294): "At one time it seemed probable that those with a double line of barbs were much earlier than the larger forms, but both have now been frequently found on sites not four centuries old," and further on he states that these two types have been discovered not only on the same sites, but in the same graves. Mr. George Allison, of Waterdown, Ont., has two bilateral harpoon points in his collection, which were found on the Sparks' farm, Beverley township, Wentworth county, and from the same place he also has two specimens with unilateral barbs.

There are not many bilateral specimens in the Provincial Museum. We have only the eight described in this article. They are all smaller and more slender than most of those with unilateral barbs, and the largest is but 7 1-8 inches long. There is one from near the mouth of the Humber river, York county, in the Museum of the Geological Survey, at Ottawa, the length of which is 9 inches, and this is the largest Ontario specimen known to the writer.

It is hard to say whether these were intended to be used as fixed points, or whether they were detachable from the shaft. Not one of the Ontario examples is provided with a hole. Dr. Rau found this to be the case with all the bilateral harpoon heads from the United States, in the National Museum in 1884. He said, "It probably has been noticed that these pierced dart-heads have all unilateral barbs; those with barbs on both sides, it will be seen, are not perforated, but may also, in part at least, have been detachable. Perhaps it is only owing to accident that none of the bilaterally barbed heads at my disposition is perforated."* Dr. Beauchamp says that it is also his "experience in the examination of a great number of specimens. But one bilateral harpoon has been submitted to him with a perforation, and of this he had at first some doubts from other unusual features."†

Nearly all examples of the bilateral type in the Museum are more or less fragmentary, and it is usually the basal portion that is missing. This is found to be the case with many specimens from New York State.

Figure 33 (7,440) shows a specimen from Nonquon island, lake Scugog, Ontario county. It is made of horn. Length, 6 3-8 inches. The side shown in the illustration is round and the lower one is flat. The head of this specimen is sagittate, and there is an extra barb on one side. The base has been rubbed down to a blunt point, which is much more rounded on the under side than on the upper, as is shown in the section at the side of the figure. Collected by Dr. A. F. Chamberlain.

The bone harpoon point shown in figure 34 (7,089) was found in York county, north of Toronto. Part of the articular end of the bone is still intact, although considerably flattened by rubbing. Its length is 7 1-8 inches. There are two pair of barbs, and these are very blunt. This condition is undoubtedly due to decay. The tip is broken.

Figure 35 shows a broken bone specimen which was found by Lieutenant Geo. E. Laidlaw on lot 44, South Portage road, Eldon

* Prehistoric fishing, p. 150.

† Horn and bone implements of the New York Indians, p. 294



Fig. (37).



Fig. (38).



Fig. (39).



Fig (45).



Fig. (40).



Fig. (41).

township, Victoria county. This specimen has three rounded barbs on one side and only two on the other. The tip is broken. Length, 3 1-8 inches.

The well made bone head shown in figure 36 (17,118) is triangular in cross-section, one side becoming convex as it approaches the point. The under side is flat. The base has been brought almost to a point. There is a shouldered notch on each corner of the triangular base, possibly to facilitate the fastening of the line by which it was secured to the shaft. There are three pair of barbs which are all moderately sharp. The tip is also quite sharp. A small piece has been broken off one side of the basal portion, but otherwise this specimen is perfect. Length, 3 inches. It comes from Percy township, Northumberland county.

Figure 37 (8,105) shows one from lake Medad, Nelson township, Halton county. It is made of bone, and is fragmentary. Its length is 2 $\frac{3}{4}$ inches.

Another fragmentary harpoon head is shown in figure 38 (7,091). It has three pair of blunt barbs. The tip is obtuse. This specimen is made of horn, and is 4 inches long. It is from York county.

Figure 39 (21,610) represents a fragmentary bone specimen from lot 12, concession 1, Fenelon township, Victoria county. It is elliptical in cross-section near the third pair of barbs, but, as shown in the illustration, one of the round sides becomes sharply ridged as it approaches the point. The barbs are blunt, but the tip is sharp. Length, 3 7-8 inches. Collected by Lieutenant G. E. Laidlaw.

Figure 40 (8,092) shows another bilateral specimen, and this one comes from near the town of Simcoe, Norfolk county; the most westerly point in Ontario where this type has been found. There are five pair of barbs, and they are not very sharp, and all are polished. The tip is blunt. The natural longitudinal hollow on the side shown in the figure has been partly duplicated, from the tip to the last pair of barbs on the reverse side, by the primitive workman. This specimen is made of bone, and its length from the point to the fractured end is 5 7-8 inches.

III. TOGGLE-HEADS.

Mr. Boyle's suggestion that the specimens illustrated and described below were possibly used as toggle-heads led the writer to make a study of those in the Provincial Museum. In comparing them with Eskimo examples, one is struck with the remarkable resemblance between them. A glance at the two toggle-heads selected from the Eskimo collection in the Museum, shown in figures 41 and 42,* will convince one that our specimens were used for the same purpose, and a comparison with some of the many figures given by Mason in his "Aboriginal American Harpoons" would strengthen this impression. The writer was surprised to read that similar specimens had been found in Europe. Figures 43 and 44, taken from Keller's "Lake Dwellings of Switzerland," show two specimens from a lake dwelling on Laibach Moor, Austria, which resemble the Ontario and

* Fig. 41 (22,188) is from the mouth of the Mackenzie river, and was collected by Rev. C. E. Whitaker. It is part of a harpoon used for spearing the white grampus. The one shown in fig. 42 (23,600) was obtained from the natives of Herschel island by the Rt. Rev. I. O. Stringer. It has two pairs of barbs. Both specimens are provided with steel blades.

Eskimo forms very much. They are thus described by Ed. Freih. von Sacken: "Pieces of antlers cut off diagonally, regularly sharpened, perfectly polished, and with a well-bored hole in the middle. Four specimens were found from 3 1-8 to 4 inches in length. The holes are bored in different positions, figures 14 and 20 [on pl. clxviii].* Some people have thought them to be the tops of gaffs, or fish spears, but from their excellent workmanship they probably are ornaments."†

The toggle-head harpoon is much more complicated than the barbed type. Figure 45 (22,187) shows an Eskimo model of one of these harpoons, from Herschel island. It consists of three parts, the head, the loose shaft, and the wooden shaft. When an animal is struck with this instrument the loose shaft is withdrawn in order to allow the head to toggle under the skin. It was only among the Eskimo that the loose shaft was employed; the Nascopie Indian harpoon has none, and those of the Pacific Coast Indians from California northward also lack this feature.* Our specimens were, no doubt, also used without the loose shaft, as nothing resembling this portion has ever been found in Ontario; and this leads us to think that possibly our Indians obtained the toggle-head idea from the Nascopies, rather than from the Eskimo.

The toggle-head, from lot 1, concession 6, Orillia township, Simcoe county, shown in figure 46 (26,960) is a well preserved specimen. It is slightly more than 4 inches long, and $\frac{3}{4}$ wide at the butt end, and is made of deer horn. The socket hole is 1 5-8 inches deep, and opens into the line hole, which was bored from both sides. There is the beginning of another perforation above this one, but a little to one side. It appears to have been the intention of the maker, at first, to have the line hole here, but for some reason or other, possibly because it was not in line with the barb, the boring of the hole was not completed. Another beginning was made below this one. There is a notch above the largest of these holes, near the butt end. Perhaps the maker intended to shorten the main portion of the head, so as to make the barb or spur much longer. The spur is 3-4 of an inch long, and is quite sharp. The whole specimen is considerably polished.

Figure 47 (25,592) represents an unfinished specimen of deer or elk horn. A conical hole $\frac{1}{2}$ inch deep has been bored into the basal end. The spur is moderately sharp and bends slightly outward. The butt end has been whittled off with a slight incurve. Near the base are several kerfs or cuts made with an axe or other sharp cutting instrument. The point is whittled. Length, 4 $\frac{3}{4}$ inches. It comes from the Sealey farm, Brant county.

The specimen shown in figure 48 (8,093) is from block A, Indian Reserve, Otonabee township, Peterboro' county. It is 3 $\frac{1}{2}$ inches long, and is made of a deer horn tip. The depth of the socket hole is 1 5-16 inches, and it extends a little beyond the line hole, as is represented in the figure by the dotted lines. In this example the lateral hole is bored in a different position. There is a shallow groove around the butt end. The spur is not very sharp. This specimen is very much weathered for over half its length, but the pointed end is still quite smooth and polished.

*Our figures 43 and 44.

†P. 610, Vol. II.

‡For descriptions see Mason, Powers and Schoolcraft.

In figure 49 (21,630) we have a specimen with two spurs. The kerf or notch on the side of one of these spurs leads one to think that the maker intended to remove it. The socket hole has been scooped out to a depth of $1\frac{3}{4}$ inches. The line hole is lenticular in shape and



Fig. (42).



Figs. (43 and 44).



(Fig. 46).



Fig. (47).



Fig. (48).



Fig. (49).



(Fig. 50).



Fig. (51).

is countersunk on both sides. Length, 3 3-16 inches. It comes from lot 12, concession 1, Fenelon township, Victoria county.

Mr. H. A. Dean, of Toronto, kindly permits me to figure a specimen in his collection, from Tiny township, Simcoe county. It (figure 50) is much more slender than any of our specimens, and differs also

in not having the line hole drilled entirely through. It only goes as far as the socket hole. A piece has been broken out of the butt end, and this makes it somewhat gouge-like, but there is evidence of use subsequent to the break. Possibly the specimen was originally an arrow point, the break making it necessary to drill the hole so as to attach it more securely to the shaft. It is altogether likely, however, if the other specimens were used as toggle-heads, that this one was also employed as such. It is considerably polished. Length, $3\frac{1}{2}$ inches.

The writer is also indebted to Dr. Beauchamp for permission to reproduce a sketch of his figure 79, representing an Iroquoian specimen from New York State, in figure 51. He says, "It is hollow and pointed, but the large perforations add new features. These are not opposite, nor is the base cut straight across as in the arrowheads. Its size is another thing, and it may have been intended for a dagger or a spear. It is from the Minden or Otsungo fort, and is of horn." He describes another specimen, which may also be a toggle-head: "Figure 108 is another fine example, smaller, but having much the same character. The base is neatly cut across, but is now gougelike on one side. The implement is of hollow horn, quite sharp, and perforated from side to side. . . . This was found at Brewerton by Dr. Hinsdale."*

CONCLUSION.

The accompanying map of the central and western portions of Ontario, gives the geographical distribution of the different types of harpoon heads contained in the Provincial Museum. By correspondence with collectors, in parts of Ontario not represented in the Museum by specimens, additional data were obtained, but much more information is desired.

It will be observed that there are large portions of the Province where no harpoon heads have been found. It seems strange that in the more easterly counties none have been discovered. One would think that, owing to the large number of small lakes dotting the country between the Ottawa and the St. Lawrence, there would be ample scope for piscatorial operations, and that harpoon heads would also be numerous. As far as can be ascertained, not one has been found in the Province farther west than the town of Simcoe, in Norfolk county. One was found at Fort Wayne, Michigan (*vide ante* p. 38, footnote) which, although beyond our borders,† we have indicated on the map. No harpoons have, so far, been discovered in the Niagara peninsula. Mr. George Oliver, of Jordan Harbor, Lincoln county, says he has never heard of any harpoon heads being found, although net sinkers are very abundant, which shows that net fishing was the principal means of capturing fish.

The different types are somewhat generally distributed. The unilateral specimens with single barbs are more numerous in the counties of Brant and Wentworth, some village sites in the former county being unusually prolific, nine specimens coming from one place alone. The multiple and bilaterally barbed heads, however, are not so plentiful in this part of the Province as they are farther

* Pages 291-292. "Horn and Bone Implements of the New York Indians."

† There were three or four towns of the Neutrals or Attiwandarons on the western side of the Detroit river.

eastward. Mr. G. J. Chadd, of Trenton, who has a large collection of Indian relics from Prince Edward county, writes that he has found the three types in Hallowell and Ameliaburg townships. It is possible that they may yet be met with farther east than this. The toggle-head specimens occur in widely separated localities.

Our specimens were nearly all found within the territory formerly occupied by the Attiwandaron, Tionnontate and Huron tribes of the Huron-Iroquois stock. In New York state the finds are also confined to the region once inhabited by the "Five Nations." Dr. Beauchamp says: "Few have been reported west of the Genesee river, and along the Susquehanna and Delaware they seem unknown.* According to Prof. O. T. Mason, "Both kinds (unilateral and bilateral) are most plentiful at the inlet of Onondaga lake, the outlet of Oneida lake, and near Chaumont bay, in Jefferson county. . . . The counties in New York yielding barbed harpoons are Jefferson, Montgomery, Madison, Cayuga and Livingston.†

Finally, as to the prehistoric or modern character of these harpoon heads, there can be no doubt that most of them were made during post-European times. Those from Brant county, especially, are not prehistoric, for they have been cut out with metal tools, and some from York county appear to have been made in the same way. Moreover, the specimens from the Sealey farm were found associated with such relics of European manufacture as iron tomahawks, brass kettles, glass beads, etc. This, however, does not necessarily imply that the harpoon was introduced by the whites. On page 328 of his Bulletin, Beauchamp says: "The Iroquois made the unilateral harpoon of bone long after the whites entered New York, and the bilateral to some extent." He regards the unilateral head as "a recent form when of large size." The specimens from Brant county are nearly all much larger than most of those found farther eastward in Ontario. There can be no question as to the age of the harpoon heads taken from the Miller mounds near Rice Lake, as nothing suggestive of European contact was found by Boyle in these mounds. The bilateral specimen from Nonquon, or Noncon island, lake Scugog, might also be prehistoric, for no European relics were found with it; and even some of the other bilaterally barbed heads may have been used before the advent of the whites.

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* Page 294.

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